

REMARKS

Claims 1-33 remain pending in this application. No claims have been amended, added or cancelled herein.

In the final office action mailed May 8, 2009, the Examiner rejects: claims 1, 2, 5, 7, 15, 16, 19, and 20 under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 6,334,003 to Yokota et al. (*Yokota*) in view of U.S. Patent No. 5,465,304 to Cullen et al. (*Cullen*); claims 3 and 17 under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Yokota* and *Cullen* and in further view of U.S. Patent No. 6,661,919 to Nicholson et al. (*Nicholson*) and U.S. Patent No. 7,257,273 to Li (*Li*); claims 4 and 18 under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Yokota*, *Cullen*, and *Nicholson* and in further view of U.S. patent No. 4,180,798 to Komori et al. (*Komori*); and claim 8 as allegedly being unpatentable over *Yokota*, *Cullen*, and *Nicholson* and in further view of U.S. patent No. 4,799,077 to Kaplan et al. (*Kaplan*). Applicants respectfully traverse these rejections.

Allowable Subject Matter

Applicants thank the Examiner for indicating that claims 6, 21, and 22 would be allowable if rewritten in independent form to include the base claim and any intervening claims. Applicant appreciates the indication of allowable subject matter, but wish to defer the rewriting of claims 6, 21, and 22 in independent form pending the Examiner's consideration of the arguments presented herein. Further, the Examiner has allowed claims 9-14 and 23-33.

Claim Rejections – 35 U.S.C. § 103(a)

Claims 1, 2, 5, 7, 15, 16, 19, and 20 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 6,334,003 to Yokota et al. (*Yokota*) in view of U.S. Patent No. 5,465,304 to Cullen et al. (*Cullen*). Applicants respectfully traverse this rejection.

Exemplary embodiments of Applicants' claimed invention provide methods and devices comprising unique combinations of method steps and features, respectively, including, *inter alia*, a method comprising, *inter alia*, designating an operating mode for document recognition, analyzing pixels of the document image in the document recognition mode, classifying the document image into at least one Character Block (CB) and at least one Background Block (BB) on the basis of a result of the analysis, binarizing pixels of the BB and generating a pre-processed document image, recognizing the pre-processed document image and converting the recognized pre-processed document image into character data, and storing the recognized character data in a storage mode (see Applicants' independent claims 1 and 15).

Neither *Yokota* nor *Cullen*, alone or in combination, discloses, teaches or suggests such unique combinations of features or method steps.

The Examiner alleges that *Yokota* discloses the step of recognizing the pre-processed document image and converting the recognized pre-processed document image into character data (citing Fig. 3, A2 of *Yokota*). Applicants respectfully disagree with the Examiner's analysis.

The Examiner should first note that the Examiner has already admitted that *Yokota* does not disclose the step of generating a pre-processed document image.

Secondly, exemplary embodiments of the present invention disclose an image of a document is detected using a camera embedded in a terminal device (such as a PDA), a character image contained within the detected image is pre-processed by a pre-processor so that a clear character image can be produced, the pre-processed character image is recognized by the character recognizer, and the recognized character image is converted into character data. Erroneously recognized character data is corrected using various devices such as a stylus pen, a speech recognizer, a handwritten character recognizer, a soft keypad, etc. and the character data is stored in a desired storage area of a database. (See page 9, lines 2-9 in the specification of the instant application).

Nowhere does *Yokota* teach or suggest generating a pre-processed document image nor does *Yokota* teach or suggest recognizing the pre-processed document image and converting the recognized pre-processed document image into character data.

Yokota merely discloses executing character recognition with respect to a character region. Applicants submit that *Yokota*'s disclosure of executing character recognition with respect to a character region has nothing to do with generating a pre-processed document image, recognizing the pre-processed document image and converting the recognized pre-processed document image into character data.

The Examiner asserts that *Yokota* fails to disclose analyzing pixels of the document image in the document recognition mode, classifying the document image into at least one Character Block (CB) and at least one Background Block (BB) on the basis of a result of the analysis, binarizing pixels of the BB and generating a pre-processed document image. The Examiner then alleges that *Cullen* discloses the limitation recited above (citing Column 7, lines 46-53 and Figs. 2A and 2B of *Cullen*). Applicants respectfully disagree with the Examiner's analysis.

The Examiner cites Column 7, lines 46-53 as well as Figs. 2A and 2B of *Cullen* to meet "binarizing pixels of the BB and generating a pre-processed document image". The Examiner should first note that Figs. 2A and 2B of *Cullen* merely disclose a document segmentation system wherein a boundary rectangle is used to describe the features on a document, which will define the bounds of a pattern, e.g. a word. *Cullen* discloses that rectangle 220 provides a spatial boundary for the word "house" 221 and that rectangle 230 provides a spatial boundary for the sentence "The house is white" 231. (See Col. 5, lines 50-57 of *Cullen*). The Examiner should then note that *Cullen*'s disclosure above is different from compression of bit-mapped representation. More particularly, nowhere does *Cullen* teach or suggest classifying the document image into at least one Character Block (CB) and at least one Background Block (BB) on the basis of a result of the analysis, binarizing pixels of the BB and generating a pre-processed document image. Applicants submit that the

Examiner makes the assumption that the document image is classified into at least one Character Block (CB) and at least one Background Block (BB) on the basis of a result of the analysis by reading into the *Cullen* reference. Assuming, *arguendo*, that *Cullen* teaches that a document image is classified into a Character Block (CB) and a Background Block (BB), nowhere does *Cullen* teach or suggest that said document image classification is carried out on the basis of a result of the document image pixel analysis. In addition, nowhere does *Cullen* teach or suggest a Background Block (BB) let alone that the pixels of said Background Block (BB) is binarized. If the Examiner believes that *Cullen* teaches these features, it is respectfully requested that the Examiner point out the specific language in *Cullen* wherein these are taught.

For at least these reasons, the claim subject matter of independent claims 1 and 15 of the instant application are distinguished from *Yokota* and *Cullen*.

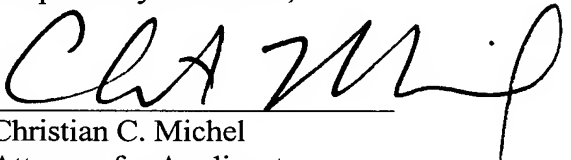
Accordingly, Applicants' independent claims 1 and 15, as well as the dependent claims (and of claims 2-8 and 16-22 which depend therefrom) under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Yokota* and *Cullen* are patentable at least for these reasons. Withdrawal of the rejections of independent claims 1 and 15 under 35 U.S.C. § 103(a) is respectfully requested.

Conclusion

Reconsideration of the above-identified application and allowance of claims 1-33 are respectfully requested.

In view of the above, it is believed that the application is in condition for allowance and notice to this effect is respectfully requested. Should the Examiner have any questions, the Examiner is invited to contact the undersigned at the telephone number indicated below.

Respectfully submitted,



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Dated: **July 8, 2009**